

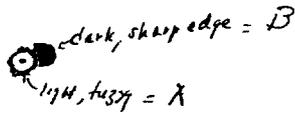
K-12 aerated culture (0.5 + 10ml PX) began 10:45 -

Main culture of K-12 irradiated 2/19/52 and frozen 20 min.
 supernatant retained and analyzed for λ - see previous page yield = ca 10⁹

1831 + 882 of previous page -

both N and P picked to water - streaked out on EMB-0 for
 colony inhibition - O.K.

Colony inhibition?
 forms



Sens of each picked
 to PX - incubated - ~~then~~ ~~500~~ ~~10~~ ~~7~~ ~~me~~

dilute 2,4 → A + B
 case

A - ca 300 colonies ± 10 type B

B - ca 300-400 colonies ± 5-10 type A.

K-12 Post irradiation effect

Culture aerated 2:00pm - centrifuged - resusp. in W-10 -

dilute to 10⁸/ml - Inoc. dilute into PX - incubate in aerator 40 min.

Time	Plate	Counts
0	K-0	- 26
	K-0-I	- 98
10	K-10	- 35
	K-10-I	- 54
15	K-15	- 17
	K-15-I	- 28++
20	K-20	- 7
	K-20-I	- 18

Survival ~~high~~ high
 ca 2.5 x 10⁻¹ at 20 min
 ca: 10⁻¹
 should be 10⁻¹
 Indicates no effect of
 post incubation on
 survival - "colony
 survival"

me 1:25

I = incubated

Cells remaining from above (ca 10⁹/ml) irradiated 20 sec

10 ml PX added to 10ml cells - incubated with air

in : 1:30

out : 4:00 - partially cleared

Cultures started 2/20/52

K-12
 W-14 85

2/21

10 colonies from N and P of 4831 + 882 picked and crossed streaked with 1831 to do. lys due to 882 - All appeared to type 1831 single colonies picked and restreaked 2/21

Cultures started

- K-12
- 1481
- 1831

K-12 Form $\begin{Bmatrix} A \\ B \end{Bmatrix}$ - 6 colonies picked of each - streaked for examination of purity. Culture in PK of each started. - Appeared to be pure on 2/22

2/22 - The day of the stuck valve -

Cultures started K-12, 1831, 1805

2/22 Cultures of Wg 14 and Wg 16 started in PK from culture of 2/14 - 0.5ml + 10 ml PK at 8:45 - out at 10:45 - centrifuged - resuspended in saline - centrifuged and resuspended in saline - Wg-14 - dil 1:10 add 1.0ml to

GROWTH HERE MAY MEAN Wg-14 HAS REVERTED

Wg-16 - W - 1-100 odd 1.0ml to

- DO + 0.1ml P₁ + 0.1ml P₂
- DO + 0.1ml P₂
- DO
- DO + 0.2ml P₁
- DO

GROWTH
2/24
-
+
+
-
+

1831 + 882 - 10 colonies of P + N of restreaking 2/22 - on 2/24 A colony of each of the strains picked to broth - streaks of 2/23 indicate all to be sensitive

Diploid 1832 - 1982 JM cultures streaked in EMS and EMB - 2/25 - segregation - EMS, EMB

2/24 Cultures started K-12, 1831, 1831 + 882 - P, 1831 + 882 - N

2/24 - Wg 14¹⁰ and Wg 16¹¹ - See previous page

Penicillin tubes

delite - 0, 2, 4 - spread ~~loop~~ ^{loop} on $\frac{1}{2}$ TSA plates

				No.	growth 24hrs	growth 48hrs
Wg-14 ¹⁰	0	2	colony picked to DO)	5	+	✓
	2	0		6	+	✓
	4	0				
Wg-16 ¹¹	0	3	" " "	1	0	0
	2	1		2	0	+
	4	0		3	0	0
				4	0	0

(28)
protein added 2/27

Penicillin tubes refrigerated

K-12 A
B

Plats of growth tubes made 2/23

B → A in colonial form and colony - slowly -

A → appears stable - contains a few B forms - original inoculum of growth tube contained 2-3% B forms

2/25/52

(29)

Pneumonia survivors (?) transferred to D(0) - see previous page

K-12 plated out to isolate (A/B) forms - dilute 10^4 - Plate 1. 343 \bar{c} 81A = 0.24A
2. 271 \bar{c} 57A = 0.19A
3. 290 \bar{c} 53A = 0.18A

Cultures started for 4/26/52

[1831 + 882] N

[1631 + 882] P

12-12

1483

2/26/52 Aerated culture of P, N, K-12 started 7:55

Aerated culture of K-12-A started 8:15

Inoculation of P, N - Cultures - Centrifuge, suspend w-D ca. dilute to contain $2 \cdot 10^7$ cells/ml

	Line	Plates	Col/Plate	S.F.
P	0	P-0	224	1.0
	10	P-10	138	6.2×10^{-1}
	20	P-20	62	2.8×10^{-1}
	30	P-30	21	9.4×10^{-2}
	40	P-40	5	2.2×10^{-2}
	N	0	N-0	382
10		N-10	229	6.0×10^{-1}
20		N-20	89	2.2×10^{-1}
30		N-30	33	8.7×10^{-2}
40		N-40	11	2.9×10^{-2}

dose extensions of about 1.0
 From inspection of about
 tree the 1681 line may
 be unusual and not
 representative of other
 from 1655 - or since
 DA came from 58-161 and
 also has due ed. 1.0, the
 order of establishing 5882
 is important. 5882
 5882+
 ↓
 5882+
 ↓
 5882+
 ↓
 5882+
 ↓
 have
 one ed. 1.0

2/26/5-

K-12 A + B farms - anti-fogged and resuspended in W-P
Dilute to 10⁸ cells/ml - Irradiated 15 sec -

Mix 1.0ml +
1.0ml 1980
spread
0.1 ml on
TSA plate

hectars A and B
applicated when
re suspended in
ca 9% plaq

A.	Dose	Plate	Cells/Plate	Phage/plate
	0	A-0	127 (88/11A)	-
	15	A-15	53 (48/11A) ✓	-136 x 2 = 272

B	Dose	Plate	Cells/Plate	Phage/plate
	0	B-0	200	-
	15	B-15	104	235 x 2 = 470

Indicates
- 200% yield -
- 2 plaques/cell
- may possible
be due to custom.
of irradiation
suspension with
free phage - doesn't
seem likely from
stand point that
cells were sedimented
and resuspended
should be exposed
to 90% dilution
in phage

K-12 loop for high titered phage stock.

Irradiate conc. suspension - ca 10⁷

35 seconds - incubate in air after adding 5.0ml W-P

in 11:45
sl. clearing 1:15
out at 3:30

titer $\approx 10^6 \cdot 0.1 = 10^7 \times$ count.

no plaque > 3,000

titer $\approx 3.0 \times 10^{10}$

Cultures started

- K-12
- 1985
- WB-1
- WB-4

similarly, this
would indicate that
the original culture
had a titer of about
 $272 \cdot 10^3 = ca 3 \times 10^{10}$
470

2/27/52

K-12 connected culture started - 11:15: 2 15 sec

~~~~~ see 2/26

K-12 A - } sample volume ↑ placed to Pk to observe rate of  $A \rightleftharpoons B$   
 B - } " " " " " " " "

Culture started

- W-1655 → to begin  $\delta t \rightarrow \lambda^\dagger$
- K-12
- Wg-14
- Wg-16

2/28 W9-16 of 4 wells swimming pencils: treatment.  
see previous page  
none grew in synthetic - After 2 days  
protein added - #2 grew - transferred to agar slant.

Cultures started K-12, W9, 14, W9, 16 - 8:30 AM  
↓  
penicillin  
run

K-12A } cultures of 2/27 plated out for examination of purity.  
K-12B }  
0.1 ml added to 10 ml PX = K-12A-2 } serial transfer to observe rate of change  
K-12B-2 } 150/250  
3A/50

K-12 Lwoff - Viscous material.  
Wash W.D. ok Inocul. 35 sec - add 10 ml PX - incubate with aer - noticed.  
Sugar in, W.D. - 10<sup>8</sup> cell

- 1. PX broth not viscous immediately after inoculation without Antifoam
- 2. PX broth not viscous with Antifoam.

lysis - 1:15 - not as viscous as usual

Viscous material removed and tested with and without hyd (HCl) with Benedict's - negative  
tested with Stumpf DNA machine - negative

Titrations of Lwoff-2 - 2, 4, 6, 7 0.1 → 337 = 3.4 x 10<sup>10</sup>  
Lwoff-3 (minima) - " → 38 = 3.8 x 10<sup>9</sup>

Cultures started

K-12  
1485

2/27 <sup>→ #</sup>  
 K-12 buff - created cult. 2 hours (ca 10<sup>7</sup>/ml) → culture  
 Centrifuge - washed in CD (15ml) - Inoculate 45 sec (more dense  
 than usual) divide into 2 portions 1 in PX  
 1 in D(0)

Incubate 2-3 hours - Some clearing in both.

2/29 #655 + #K2 - plaque not large or centered with growth -  
 growth not good on EMB-0. Incubation continued  
discarded as of no value

3/2 Titer of buff #.

$$\text{Eyn } 10^6 \xrightarrow{0.1} 1 \text{ plaque} = 1 \times 10^7$$

$$\text{PX } 10^6 \xrightarrow{0.1} 177 \times 8 = 1416 \times 10^7 = 1.4 \times 10^{10}$$

~~OK~~

3/3 Aerated cultures of 1485  
Wg-14  
WB-1  
WB-4 } Sturbed 8:30

1655 + 882 on TSA - 0.1 ml 882 (Stock labelled Qyote A) + 0.1 ml 1655

K-12 plated out for A & B from

Aerated culture of 1485 11/5<sup>AM</sup> - about 10<sup>9</sup> cells/ml  
2.0 ml of K otrol 3.4 x 10<sup>10</sup> phage/ml added =  $\frac{1}{2} \times 3.4 \times 10^{10}$  phage/ml  
Dilute 10<sup>6</sup> plate 0.1 ml TSA - 573 = 3.7 x 10<sup>9</sup>  
0.1 ml + 1485 - 3407 = 3.4 x 10<sup>9</sup>

Wg-14 - Aerated until ca 10<sup>8</sup> cells/ml - Centrifuged resuspended in sal ferrie  
added to D(m) incubated in air 12:57 - out at 2:16 - Dilute 1-10 add 0.1 ml  
D(o) + 0.3 Pen sol - plated until 1-10 3/4  
D(o) sol - plated in Complete agar  
also 1.0 ml for reversing pen -

WB-1 + WB-4  
Turbid cultures at 12:45 centrifuged and cells resuspended  
in D(m) - incubation until aerated to study lysis  
cleaned at 2:00 PM  
3/4

Cultures started -  
K-12  
1485  
Wg-16  
W 1655  
WB-1  
WB-4

3/5 Primary cultures of Wg 14 (originally mixed up with Wg 16)  
 all colonies from all labeled Wg 14 are pro-  
 in addition, in random + pro, 3 are in A3 group -  
 require either  $\beta$  alanine, tryptophan or tyrosine

35

All cultures  
 grew tryptophane -  
 all are pro<sup>-</sup>tryp<sup>-</sup>

Cultures randomly considered Wg 14 pro<sup>-</sup> were used as Wg 14 stock cultures  
 to produce pro<sup>-</sup> 10 ml O(s) cultures of 3/3 plated on O(s) for assessment of pro<sup>-</sup>  
 large no. colonies > 5000 - large (pro<sup>+</sup>) and small (pro<sup>-</sup>) - large col. picked to  
 bank.

Wg-14-1  
 Wg-14-3  
 Wg-14-4

Aerated cultures of K-12 1485 started 10:30

16S + 802

2 phage cultures for total phage and stored in EM3 loc

K-12  
 A = 2<sup>2</sup>/142  
 B = 1<sup>10</sup>/142

45 colonies of each prepared to P<sub>1</sub> - one  $\bar{c}$  and 11:15 hr

Aerated culture of 1485 - (1:30 PM)  
 10 ml Luria 2 (3 x 10<sup>10</sup>) added final vol 30 ml  
 culture placed at room temp & aerated  
 news cleared -

K-12A - centrifuged 2:30 removed supernatant -  
 plate in used for EM3  
 A dilute 10<sup>6</sup> → plate mixed 0.1 + 0.1 1485 for phage → A-0 - 230  
 used 10<sup>6</sup> plate for phage → A-5 - 1  
 " " col EM3 → A-15 - 265  
 " " col EM3 → A-15 - 209  
 B Same dilute at culture used. → B-0 - 270  
 phage before used. → B-0 - 3  
 col. after used → > 1000  
 " " col. used → 228

Don't understand  
 See earlier  
 log

Suggestion  
 that cells are  
 clumped

3/6

Culturing from Wg-14 streaked on D(0) agar for reversion  
picked ~~to broth~~ -  
D(0)

3/8 - single colony picked ~~to broth~~ to broth

1655 + PP2 - 1<sup>st</sup> picking → 2 streakings  
↓  
6 colonies picked from each and streaked on EMB -

Aerated cultures of  
K-12  
1485  
Wg16  
W3-1 (D(0)) } at 9:00  
← clear in 3/7  
3/8

Plating from Pen-2 of Wg14 replica to D(0) agar -

K-12 huff 35 sec.

Inc at 11:45

slight clearing 1:15 - out 2:00 becoming turbid

Wg16 - washed - Aerated in D(0) 1:15

Del 1-10

1 ml + 10 ml D(0) + 0.3 ml Pen -

1 ml + 10 ml D(0) -

3/7

SK-161 - 3 hour aerated culture - centrifuged and resuspended in WD

huff 35 sec. partial clearing after 2 hours -

3/8 Pen tubes of U<sub>7</sub>16 plated TSA -  
1-10 -  
und -

58-161 hwpf  
del 10<sup>6</sup>  $\rightarrow$  900 x 10<sup>7</sup> = (9 x 10<sup>9</sup>)

Culture  
w-1655  
w<sub>7</sub>-19 ptt

3/10

Streaks of W<sub>7-14</sub> ~~Pr~~ Pen run 2 on TSA  
replica'd to D(0) + Pr for the purpose of detaching  
2<sup>nd</sup> step mut. — 10 failed to grow on D(0) + Pr replica

Streak culture W<sub>7-14</sub> Pr<sup>+</sup> from broth growth tube -  
PX ← D(0) agar ← D(0) broth ← heavy inoculated D(0)

W<sub>7-16</sub> Pen 1<sup>st</sup> run -  
undiluted col count = 18  
1-10 dil = ca 250

- ① undiluted replica'd to D(0)
- ② 30 columns of 1-10 dil plates, spotted on TSA

Aerated cultures of <sup>-huff<sup>2</sup></sup> 8-161 and <sup>-huff<sup>5</sup></sup> K-12 started 1:30 PM  
(1.0 ml + 1.0 ml PX)

End 4:15 Centrifuged and resuspended 5 ml WD -  
prod 35 sec - 5 ml PX added → aerated - 4:25 PM

Cleaning 6:00 PM  
out 6:45

Culture started -  
K-12  
8-161  
W1655  
W1485

3/11

W9-14 Pr<sup>-</sup> - anaerobes - picked from TSA plate to 2<sup>nd</sup> streaking on TSA for replica -

|      |        |                       |                                                     |                                                             |                                                      |
|------|--------|-----------------------|-----------------------------------------------------|-------------------------------------------------------------|------------------------------------------------------|
| Lugg | 58-161 | L2                    | centrifuge                                          |                                                             | → plaque on 1485 → $600 \times 10^7 = 6 \times 10^9$ |
|      |        |                       | - dil 10 <sup>6</sup>                               | → colonies on EM10 low → $15 \times 10^5 = 1.5 \times 10^6$ |                                                      |
|      | K-12   | L5                    | - dil 10 <sup>9</sup>                               | → colonies on EM10 low → $15 \times 10^5 = 1.5 \times 10^6$ |                                                      |
|      |        |                       | - dil 10 <sup>6</sup>                               | → plaque on 1485 → $400 \times 10^7 = 4 \times 10^9$        |                                                      |
|      |        | - dil 10 <sup>9</sup> | → <del>colonies</del> on EM10 low → $0 \times 10^5$ |                                                             |                                                      |

W9-16 - Colonies picked from Pen suscoron plate  
5 tubes to carry over to TSA spotting  
- Plate replica to D(10)

W1655 + 882 - Prep of 882 on 1661 lys A.

~~W1655~~  
 W1655 } Aerated culture 4 hours - Centrifuged and resuspended in 1ml  
 58-161 }  
 used 50  $\mu$ l. Add  $1.6 \times 10^{10} \lambda = 1.6 \times 10^9 \lambda / \mu$   
 add PX - incubate 1:15 PM -  
 no clearing 3:15  
 clearing 4:05

3/14

1655+882 - 12 plaques picked and observed on EMB(0).  
from streaks 12 colonies picked streaked on EMB(0)

48

W9-16 Pen run 2

15 colonies survived - EMB - picked to ~~EMB~~ H<sub>2</sub>O and  
streaked on D(0) - 1 failed to grow - picked to streak.

W9-19 Pen survivors - replica to A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub>, A<sub>4</sub>, A<sub>5</sub>

growth only on A<sub>3</sub> - (alanine, try. or trypt)

W916 Pen survivors 1

30 additional col. picked to TSA - replica to  
D(0) - all grew.

3/15 W9-14

Pen selection + trypt + pen tube mic with  
pen survivors determined @ A3

1655+882

40 colonies picked from 1st purification  
of plaque pickings cross streaked on 1655 for lys. exam.

One showed phage on 1655  
3/17

W9/16 Pen 3 survivors -

60 <sup>additional</sup> colonies picked to NA and streaked

W9/16 Pen 2 mutant.

Inoculated in primary under

| Tube #   | 1              | 2              | 3              | 4              | 5              | 6   | 7    | PEN |
|----------|----------------|----------------|----------------|----------------|----------------|-----|------|-----|
| Contents | A <sub>1</sub> | A <sub>2</sub> | A <sub>3</sub> | A <sub>4</sub> | A <sub>5</sub> | YWA | Vit. |     |
|          | -              | -              | -              | +              | -              | -   | -    |     |

3/16 Wq 16.

60 subreads in NA. Replic'd to EMS-loc (no D(0) avail)

All ~~grow~~ <sup>grow</sup> 3/17 (42)

Wq 14

Ten A3 mutants in D(0) + proline + trypt

| Tube        | 1     | 2 | 3 | 4 | 5     | 6 | 7 | 8 | 9 | 10 |
|-------------|-------|---|---|---|-------|---|---|---|---|----|
| 3/16 24 hr  | +     | + | + | - | -     | + | - | - | - | -  |
| 3/17 48 hr  | +     | + | + | - | +     | + | - | - | - | -  |
| 3/18 minor. | _____ |   |   | + | _____ |   |   | + | + | +  |

< discarded

Wq-16 A4 break down

| <u>ent</u> | <u>pro</u> | <u>asp</u> | <u>thr</u> | <u>glut</u> |
|------------|------------|------------|------------|-------------|
| -          | +          | -          | -          | -           |

Wq16 pro-

3/18 At 14 pm - trypt - aerated culture from overnight unacc.  
 started 8:00 - centrifuged 12:15, resuspended in sal, centrifuged  
 resuspended in WD buff - aerated - 1:20  
 dilute 1-10 with sal - add 0.1 ul to 10 ul DB + pr + trypt + pen  
 .. 10 ul (0) .. .. -

K-12 } Aerated culture 8:00 AM - centrifuged 12:15  
 SF-161 } Pen.  
 Resuspended in w-D - mod 35 sec. + 10 ul Pen  
 Inc 12:55

SF-161 Part. clear 2:30 } cleared 4:00  
 K-12 .. .. 3:30 }

SF-161 L3 Pen

K-12 L6 Pen

3/19

44

Wg 14 pu - trypt -  
Penicillin run - control gear

plated out undil. 16 colonies  
EMB-toc 1-10 1 colony

1655 + 882 - Purification of stock on 1655 showing  
plaque (3/15) 20 colonies plated and  
cross checked on 1655

K-12 L6 Pen } centrifuged and plated in tube (20 ul / each)  
58-161 L3 Pen }

Assay

58-161  $10^2 - 10^4 - 10^6 - 10^7 \xrightarrow{0.1}$  plaque =  
 $\xrightarrow{0.1}$  cells =

K-12  $10^2 - 10^4 - 10^6 - 10^7 \xrightarrow{0.1}$  plaque =  
 $\xrightarrow{0.1}$  colonies =

*new line*

K-12 Plated out for repeat of A - trypt  
B - EMB-toc

W-1655 - culture started in Pen + 0.3% agar  
(1.0 + 10 ml)

1.0 ml ( $3 \times 10^8$ ) plaque added after turbidity about  $5 \times 10^8$   
immediate loss of flow lines and partial clearing.

(discarded)

3/20

(45)

Wg 14 pro<sup>-</sup> trypt<sup>-</sup>

Pen <sup>Survival</sup> colonies streaked on EMB for prior to replication  
Observed that U<sub>1</sub> It is lac<sup>-</sup>

K-12A (rough col) - 2 colonies picked & Pen and aerated P: 30  
K-12B (smooth col) - 3 colonies " " " " " " S: 30 } out 10:45

EMB { 1st plate: 2+A / 190(A+B)  
2nd plate: 3+A / 16(A+B)

Aerated cult. of (1831 + 882) N in Pen begun 8:45

K-12A Centrifuged, sample in sol - dilute 2, 4, 55  
Shake 2 min in shaker.

|      |                                          |                  |               |      |             |      |
|------|------------------------------------------|------------------|---------------|------|-------------|------|
| A-0  | 0.1 ml                                   | (61)             | Cell Survival | 1.0  | K-12A phage | 0.33 |
| A-0  | 0.5 ml + 0.5 ml 1% <sup>1</sup> + 0.1 ml | 10 × 2 = 20      |               | 0.57 |             |      |
| A-15 | 0.5 ml                                   | 35               |               |      |             |      |
| A-15 | 0.5 ml + 0.5 ml 1% <sup>1</sup>          | 41 × 2 = 82 (62) |               |      |             |      |

K-12B Centrifuged and as above

|      |                                 |             |          |               |     |             |  |
|------|---------------------------------|-------------|----------|---------------|-----|-------------|--|
| B-0  |                                 | 65          | 65       | Cell survival | 1.0 | K-12B phage |  |
| B-0  | 0.5 ml + 0.5 ml 1% <sup>1</sup> | 6 × 2 = 12  |          | 0.32          |     |             |  |
| B-15 |                                 | 21          | 21       |               |     |             |  |
| B-15 | 0.5 ml + 0.5 ml 1% <sup>1</sup> | 42 × 2 = 84 | 12<br>72 |               |     |             |  |

*right phage titre*  
10 × 2 × 10<sup>6</sup> = 2 × 10<sup>7</sup>

*again*  
100%  
yields  
1.0  
w/ 1-11 g/plate  
100%  
cell survival  
cell even  
will about  
30-50% survival

(1831 + 882) N aerated cult. ca 5 × 10<sup>8</sup> - diluted  
10<sup>2</sup>, 10<sup>4</sup>, 10<sup>5</sup>/2

| Dose     | Survival               |
|----------|------------------------|
| 0 - 485  | 8.2 × 10 <sup>8</sup>  |
| 10 - 398 | 8.2 × 10 <sup>-1</sup> |
| 20 - 202 | 1.8 × 10 <sup>-1</sup> |
| 30 - 87  | 1.8 × 10 <sup>-1</sup> |
| 40 - 49  | 1.0 × 10 <sup>-1</sup> |

3/27 Monday -

(46)

Wq 14 pro-typt -

16 survivors in EMB

Picked to D(0) + typt + pro on 3/21

3/22 all grew except #6 + #8

on 3/29 inoculated #6, #8 into fresh typt + pro + D(0) for recheck

Both grew 3/25

1655 + 882 -

1.0 ml + 10 ml Pe - aerated 90 min.

dilute to ca  $10^3$  cells/ml - Inoc in sal.

| Dose | Plate Count | SF.                  |
|------|-------------|----------------------|
| 0    | 211         | 1.0                  |
| 10   | 125         | $5.9 \times 10^{-1}$ |
| 20   | 66          | $3.1 \times 10^{-1}$ |
| 30   | 21 (Low)    | $9.9 \times 10^{-2}$ |
| 40   | 26          | $7.2 \times 10^{-1}$ |

Dose  
extends in  
line between  
2. - 3.0

Why frequency  
due to a type. Plated in  
different media and incubated.

Tuesday 3/26

(47)

Wg 16 pr<sup>-</sup> aerated culture started 9:30 - out 12:30 - Wash  
suspension in D(0) + pr + Pen - 20 colonies survived  
D(0) + pr -

K-12 B - Effect of agar growth<sup>etc</sup> on growth.

Colonies removed from K-11 plate (EMB) to H<sub>2</sub>O  
Spread on EMB - incubated          hrs - Washed off, centrifuged  
and resuspended in sal - dilute to 10<sup>7</sup> cells/ml - moderate

not done

K-12 L6 - in Pen - T<sub>2</sub>L<sub>6</sub> Filtered zone - recovered ca 12

dil 10<sup>6</sup> → 1.0 ml + 1.0 ml 19F5 → 0.1 ml T8A > 1000  
count > 10<sup>9</sup>

$$10^6 \cdot 10 \cdot 2 = 2 \times 10^7 \times 1000 = 2 \times 10^{10}$$

K-12 Transduction of 58-161

K-12 L6 (above) + un-aerated culture of 58-161

|             |        |        |
|-------------|--------|--------|
| L6          | 1.0 ml | -      |
| 58-161 cult | 1.0 ml | 1.0 ml |
| Burk broth  | -      | 1.0 ml |

no colonies 2/26  
residual growth

no colonies 2/27  
discarded

Centrifuge - add 0.1 ml Sal - Centrifuge

Plate 0.1 ml → D(0)

Dil 1-10 → D(0) (not broth)

|  | phage | broth |
|--|-------|-------|
|  |       | -     |

W 1655 + ~~1~~ + of agar - partial clearing at 2 hours -  
still partially clear 3/2

3/20

1655+882 plated out from overnight culture - ca 1000 plaques - indicate either change in virus or sensitivity of 1655+882 cells - hopefully.

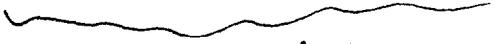
(1655+882) +  $\lambda$  discarded because of absence



2/27 Mix up concerning Holt tubes.

- 15 ~~plates~~ <sup>tubes</sup> of suspension of being uniform. spotted
- in EMB loc - all neg
- EMB mol - all pos.
- D(0) - all failed to grow

Spoke out of another batch of the base showing EMB in body - no growth



Wg/16 pr- few survivors

20 colonies picked and streaked on TSA



1655 +  $\lambda$  + 0.2% agar - partial clearing - 3 hours

1655 +  $\lambda$  - plates out on D(0) after 30 min to (0.1ml)

observe transduction effect.

|                 |      |        |
|-----------------|------|--------|
| minute colonies | 2/27 | < 1000 |
| "               | "    | 2/29   |
| "               | "    | 2/30   |

Over and culture

3/29

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K-12 - Lac<sup>-</sup> K-12 observed (?) - picked and streaked in EMBI lac

slight from  
reaction in EMBI lac  
→ streaked again  
2/30 in EMBI-0

Wg 16 Pr - - Pen selection survivors (190 heads)

replac'd to D6 + Pr  
EMBI lac.

all gone -

2/30 ~~Wg~~ Wg 16 Pr + 882 in EMBI lac picked  
for purification - streaked in EMBI-0  
on a small colony from (?) 2/30

Cultures of 19 pr - dupl -  
58-161 made for crossing }

Small  
colony from 1655 +  $\lambda$  transductions picked  
to broth - in case transduction ~~requires~~ <sup>requires</sup> a 2 step  
process - one for each requirement (that is BM really exists)

3/31 W655 + 872  
5 colonies streaked in EMB

Picked 5 from each and restreaked

Proce streaking  
quantitative results - repeat

58-161  
W914 pr<sup>-</sup> typt -

Centrifuged, resuspended in Salini, centrifuge, resuspended

| tube   | 1     | 2     | 3     |
|--------|-------|-------|-------|
| W914   | 1.0ml | 1.0ml | -     |
| 58-161 | -     | 1.0ml | 1.0ml |
| broth  | 1.0ml | -     | 1.0ml |

plate out 0.1ml on 3 EMB - <sup>don't have</sup> (EMB ± lost)

no colonies 4/1  
no colonies 4/2  
discarded

W1655 (transduced one step?)

overnight culture resuspended - 0.1ml & prep added -

Centrifuged and resuspended in sal.  
plate out 0.1ml on O/O

no colonies 4/1  
no colonies 4/2 discarded